

Species names based on photographs: debate closed

ZHI-QIANG ZHANG^{1,2}

¹*Landcare Research, 231 Morrin Road, Auckland, New Zealand; ZhangZ@landcareresearch.co.nz*

²*School of Biological Sciences, the University of Auckland, Auckland, New Zealand*

Discussions of current issues of broad interest in zoological taxonomy are encouraged in *Zootaxa* (Zhang 2007). One recent topic examines species names based on photographs without preserved specimens. This is not a new topic: as Ceríaco *et al.* (2016) correctly noted, this topic was previously discussed about a decade ago in *Zootaxa* (Dubois & Nemésio 2007; Donegan 2008), and was soon followed by a series of opinions and rebuttals when the critically endangered species Galápagos pink land iguana—*Conolophus marthae* Gentile & Snell, 2009—was named without a preserved holotype (Donegan 2009; Nemésio 2009a,b; Dubois 2009; Gentile & Snell 2009; Minelli 2009).

The recent debates of photograph-based species names in *Zootaxa* (e.g. Amorim *et al.* 2016; Ceríaco *et al.* 2016; Cianferoni & Bartolozzi 2016) were in responses to articles published elsewhere (e.g. Marshall & Evenhuis 2015; Pape 2016) and/or in *Zootaxa* (e.g. Chaladze 2017; Faúndez 2017; Thorpe 2017). These include arguments for and against photograph-based species names, as well as calls for the improvement of the Code articles (International Commission on Zoological Nomenclature 1999) concerning this topic. In this issue, two more papers on this topic are published (Garrouste 2017; Rogers *et al.* 2017). These are edited by our editor for nomenclature Prof. A. Minelli (Italy) who feels that it is time to close this debate. I fully agree with him and now close this series of debates.

It should be noted here that a special issue of *Bionomina* in 2017 was dedicated to this topic (Aguiar *et al.* 2017; Dubois 2017a,b; Epstein 2017; Grandcolas 2017; Löbl 2017; Orrico 2017; Raposo & Kirwan 2017). That specialist journal for nomenclature is a better forum than *Zootaxa*, if there is further interest in this topic.

It is also timely to close this debate because the International Commission on Zoological Nomenclature (2017) has just published “Declaration 45” to clarify the related texts in the “International Code of Zoological Nomenclature, fourth edition” (International Commission on Zoological Nomenclature 1999). I quote two important points that clearly address the issues in this debate:

“Whenever feasible, new species-group taxa should be established on the basis of at least one preserved type specimen.”

“Establishing new species-group taxa without preserved name-bearing type material is permissible under the Code, but is discouraged unless justified by special circumstances, such as when capture or preservation of specimens is not feasible for technical reasons or for conservation concerns, or when specimens must be destroyed to reliably diagnose a new species.”

I thank Prof. A. Minelli for facilitating the debate of this topic in *Zootaxa* and for his suggestion to close this debate in this journal. I also thank Anne Austin (Landcare Research, Lincoln) for review and comments.

References

Aguiar, J.J.M., Santos, J.C. & Urso-Guimarães, M.V. (2017) On the use of photography in science and taxonomy: how images can provide a basis for their own authentication. *Bionomina*, 12, 44–47.
<https://doi.org/10.11646/bionomina.12.1.4>

Amorim, D.S., Santos, C.M.D., Krell, F.-T., Dubois, A., Nihei, S.S., Oliveira, O.M.P., Pont, A., Song, H., Verdade, V.K., Fachin, D.A., Klassa, B., Lamas, C.J.E., Oliveira, S.S., Carvalho, C.J.B. De, Mello-Patiu, C.A., Hajdu, E., Couri, M.S., Silva, V.C., Capellari, R.S., Falaschi, R.L., Feitosa, R.M., Prendini, L., Pombal, J.P.J., Fernández, F., Rocha, R.M., Lattke, J.E., Caramaschi, U., Duarte, M., Marques, A.C., Reis, R.E., Kurina, O., Takiya, D.M., Tavares, M., Fernandes, D.S., Franco, F.L., Cuezzo, F., Paulson, D., Guénard, B., Schlick-Steiner, B.C., Arthofer, W., Steiner, F.M., Fisher, B.L., Johnson, R.A., Delsinne, T.D., Donoso, D.A., Mulieri, P.R., Patitucci, L.D., Carpenter, J.M., Herman, L. & Grimaldi, D. (2016) Timeless standards for species delimitation. *Zootaxa*, 4137 (1), 121–128.

http://dx.doi.org/10.11646/zootaxa.4137.1.9

Ceríaco, L.M., Gutierrez, E.E. & Dubois, A. (2016) Photography-based taxonomy is inadequate, unnecessary, and potentially harmful for biological sciences. *Zootaxa*, 4196 (3), 435–445.
<https://doi.org/10.11646/zootaxa.4196.3.9>

Chaladze, G. (2017) Taxonomy should be more photography based—eliminate need of physical specimen to study morphology. *Zootaxa*, 4247 (3), 331–331.
<http://dx.doi.org/10.11646/zootaxa.4247.3.6>

Cianferoni, F. & Bartolozzi, L. (2016) Warning: potential problems for taxonomy on the horizon? *Zootaxa*, 4139(1), 128–130.
<http://dx.doi.org/10.11646/zootaxa.4139.1.8>

Donegan, T.M. (2008) New species and subspecies descriptions do not and should not always require a dead type specimen. *Zootaxa*, 1761, 37–48.

Donegan, T.M. (2009) Type specimens, samples of live individuals and the Galapagos Pink Land Iguana. *Zootaxa*, 2021, 12–20.

Dubois, A. (2009) Endangered species and endangered knowledge. *Zootaxa*, 2201, 26–29.

Dubois, A. (2017a) The need of reference specimens in zoological taxonomy and nomenclature. *Bionomina*, 12, 4–38.
<https://doi.org/10.11646/bionomina.12.1.2>

Dubois, A. (2017b) Diagnoses in zoological taxonomy and nomenclature. *Bionomina*, 12, 63–85.
<https://doi.org/10.11646/bionomina.12.1.8>

Dubois, A. & Nemésio, A. (2007) Does nomenclatural availability of nomina of new species or subspecies require the deposition of vouchers in collections? *Zootaxa*, 1409, 1–22.

Epstein, M. (2017) Specimens and zoological nomenclature. *Bionomina*, 12, 1–3.
<https://dx.doi.org/10.11646/bionomina.12.1.1>

Faúndez, D.I. (2017) Photography-based taxonomy: Is it necessary to reform the Code, and what that exactly means? *Zootaxa*, 4247 (3), 332–332.
<https://dx.doi.org/10.11646/zootaxa.4247.3.7>

Garrouste, R. (2017) The “wild shot”: photography for more biology in natural history collections, not for replacing vouchers. *Zootaxa*, 4269, 453–454.
<https://doi.org/10.11646/zootaxa.4269.4.2>

Grandcolas, P. (2017) Loosing the connection between the observation and the specimen: a by-product of the digital era or a trend inherited from general biology? *Bionomina*, 12, 57–62.

Gentile, G. & Snell, H. (2009) *Conolophus marthae* sp. nov. (Squamata: Iguanidae), a new species of land iguana from the Galápagos archipelago. *Zootaxa*, 2201, 1–10.

International Commission on Zoological Nomenclature (1999) *International Code of Zoological Nomenclature. Fourth edition*. London, International Trust for Zoological Nomenclature, xxix + 306 pp.

International Commission on Zoological Nomenclature (2017) Declaration 45 – Addition of Recommendations to Article 73 and of the term “specimen, preserved” to the Glossary. *Bulletin of Zoological Nomenclature*, 73 (2–4), 96–97.
<http://dx.doi.org/10.21805/bzn.v73i2.a2>

Löbl, I. (2017) Assessing biodiversity: a pain in the neck. *Bionomina*, 12, 39–43.
<https://dx.doi.org/10.11646/bionomina.12.1.3>

Marshall, S.A. & Evenhuis, N.L. (2015) New species without dead bodies: a case for photo-based descriptions, illustrated by a striking new species of *Marleyimyia* Hesse (Diptera, Bombyliidae) from South Africa. *Zookeys*, 525, 117–127.
<http://dx.doi.org/10.3897/zookeys.525.6143>

Minelli, A. (2009) Commentaries on Gentile & Snell (2009): an introduction. *Zootaxa*, 2201, 11–11.

Nemésio, A. (2009a) Nomenclatural availability of nomina of new species should always require the deposition of preserved specimens in collections: a rebuttal to Donegan (2008). *Zootaxa*, 2045, 1–16.

Nemésio, A. (2009b) On the live holotype of the Galápagos pink land Iguana, *Conolophus marthae* Gentile & Snell, 2009 (Squamata: Iguanidae): is it an acceptable exception? *Zootaxa*, 2201, 21–25.

Orrico, V.G.D. (2017) Photography-based taxonomy is still really inadequate, unnecessary, and potentially harmful for biological sciences. A reply to Thorpe (2017). *Bionomina*, 12, 47–51.
<https://dx.doi.org/10.11646/bionomina.12.1.5>

Pape, T. (2016) Taxonomy: species can be named from photos. *Nature*, 537, 307–307.
<http://dx.doi.org/10.1038/537307b>

Raposo, M.A. & Kirwan, G.M. (2017) What lies beneath the controversy as to the necessity of physical types for describing new species? *Bionomina*, 12, 52–56.
<https://dx.doi.org/10.11646/bionomina.12.1.6>

Rogers, D.C., Ahyong, S.T., Boyko, C.B. & d'Udekem d'Acoz, C. (2017) Images are not and should not ever be type specimens: a rebuttal to Garraffoni & Freitas. *Zootaxa*, 4269, 455–459.
<https://doi.org/10.11646/zootaxa.4269.4.3>

Thorpe, S.E. (2017) Is photography-based taxonomy really inadequate, unnecessary, and potentially harmful for biological sciences? A reply to Ceríaco et al. (2016). *Zootaxa*, 4226 (3), 449–450.
<https://dx.doi.org/10.11646/zootaxa.4226.3.9>

Zhang, Z.Q. (2017) A forum for the discussion of issues in zoological taxonomy. *Zootaxa*, 1407, 1–2.